

What is claimed:

1 1. A ratcheting tool comprising:
2 a handle;
3 a head extending from the handle and having a first compartment, a second
4 compartment that opens to the first compartment, and a third compartment that opens to the
5 second compartment;
6 a gear ring rotatably disposed in the first compartment and defining a plurality of first
7 teeth about an outer circumference thereof;
8 a pawl disposed in the second compartment and having
9 a front side that faces the first teeth of the gear ring and that has a plurality of
10 second teeth, and
11 a back side facing away from the gear ring,
12 wherein the pawl is movable within the second compartment between a first
13 position in which the first teeth and second teeth are engaged on one side of the second
14 compartment and a second position in which the first teeth are engaged on an opposite side of
15 the second compartment;
16 a housing disposed in the third compartment;
17 a spring received by the housing and in biasing engagement with the back side of the
18 pawl so that the spring biases the second teeth of the pawl into meshing engagement with the
19 first teeth of the gear ring when the pawl is in either the first position or the second position
20 and so that the pawl is movable against the bias of the spring when the handle is rotated in a
21 ratcheting direction with respect to the gear ring; and
22 a lever having
23 a hand actuatable outer portion and
24 an inner portion extending into the head in driving engagement with the pawl,
25 wherein the lever is disposed movably with respect to the head and with respect
26 to the housing so that a movement of the hand actuatable portion with respect to the head and
27 the housing moves the inner portion to drive the pawl from one of the first position and the
28 second position toward the other of the first position and the second position against the bias of
29 the spring.

- 1 2. The ratcheting tool as in claim 1, wherein the housing is disposed in a fixed
2 position with respect to the head.
- 1 3. The ratcheting tool as in claim 1, wherein the lever is disposed rotatably in the
2 head.
- 1 4. The ratcheting tool as in claim 3, wherein the head defines a hole that opens to
2 the second compartment, and wherein the lever is rotatably disposed in the hole.
- 1 5. The ratcheting tool as in claim 3, wherein the inner portion of the lever includes
2 a pin that extends between opposing surfaces of the pawl so that a rotation of the lever causes
3 the pin to engage one of the opposing surfaces to thereby drive the pawl from one of the first
4 position and the second position toward the other of the first position and the second position.
- 1 6. The ratcheting tool as in claim 1, including a pin received by the housing
2 between the spring and the back side of the pawl so that the spring biases the pawl through the
3 pin.
- 1 7. The ratcheting tool as in claim 1, wherein the back side of the pawl defines two
2 grooves separated by a ridge, and wherein the spring biasingly engages one of the grooves
3 when the pawl is in the first position and biasingly engages the other of the grooves when the
4 pawl is in the second position.
- 1 8. A ratcheting tool comprising:
2 a handle;
3 a head extending from the handle and having a first compartment, a second
4 compartment that opens to the first compartment, and a third compartment that opens to the
5 second compartment;
6 a gear ring rotatably disposed in the first compartment and defining a plurality of first
7 teeth about an outer circumference thereof;
8 a pawl disposed in the second compartment and having
9 a front side that faces the first teeth of the gear ring and that has a plurality of
10 second teeth, and
11 a back side facing away from the gear ring,
12 wherein the pawl is slidable within the second compartment between a first
13 position in which the pawl is wedged between the gear ring and a first side surface of the

14 second compartment and a second position in which the pawl is wedged between the gear ring
15 and a second side surface of the second compartment;
16 a housing disposed in the third compartment;
17 a spring received by the housing and in biasing engagement with the back side of the
18 pawl so that the spring biases the second teeth of the pawl into meshing engagement with the
19 first teeth of the gear ring when the pawl is in either the first position or the second position
20 and so that the pawl is movable against the bias of the spring when the handle is rotated in a
21 ratcheting direction with respect to the gear ring; and
22 a lever having
23 a hand actuatable outer portion and
24 an inner portion extending into the head in driving engagement with the pawl,
25 wherein the lever is disposed in the head movably with respect to the head and
26 with respect to the housing so that a movement of the hand actuatable portion with respect to
27 the head and the housing moves the inner portion to drive the pawl from one of the first
28 position and the second position toward the other of the first position and the second position
29 against the bias of the spring.

1 9. The ratcheting tool as in claim 8, wherein the housing is disposed in a fixed
2 position with respect to the head.

1 10. The ratcheting tool as in claim 8, wherein the lever is disposed rotatably in the
2 head.

1 11. The ratcheting tool as in claim 10, wherein the head defines a hole that opens to
2 the second compartment, and wherein the lever is rotatably disposed in the hole.

1 12. The ratcheting tool as in claim 10, wherein the housing defines an arcuate
2 groove on a surface thereof that faces the lever, and wherein the inner portion of the lever
3 includes a first pin that is received in the arcuate groove so that the arcuate groove limits
4 rotation of the lever with respect to the housing.

1 13. The ratcheting tool as in claim 12, wherein the inner portion of the lever
2 includes a second pin that extends between opposing surfaces of the pawl so that a rotation of
3 the lever causes the second pin to engage one of the opposing surfaces to thereby drive the
4 pawl from one of the first position and the second position toward the other of the first position
5 and the second position.

1 14. The ratcheting tool as in claim 8, including a pin received by the housing
2 between the spring and the back side of the pawl so that the spring biases the pawl through the
3 pin.

1 15. The ratcheting tool as in claim 8, wherein the back side of the pawl defines two
2 grooves separated by a ridge, and wherein the spring biasingly engages one of the grooves
3 when the pawl is in the first position and biasingly engages the other of the grooves when the
4 pawl is in the second position.

1 16. The ratcheting tool as in claim 8, wherein the surface of the housing that faces
2 the lever defines at least one bore in which a spring is disposed in engagement with the lever
3 so that the spring biases the lever against the head.

1 17. The ratcheting tool as in claim 8, wherein an inner circumference of the gear
2 ring defines a plurality of equiangularly spaced keys.

1 18. The ratcheting tool as in claim 17, further comprising a tool receivable within
2 the gear ring so that the gear ring applies torque from the handle to the tool through the gear
3 ring, wherein the tool has a tool head and a post attached to the tool head, and wherein an
4 outer surface of the post defines a plurality of equiangularly spaced keyways that receive the
5 keys of the gear ring to thereby hold the post rotationally with respect to the gear ring.

1 19. The ratcheting tool as in claim 18, wherein the inner circumference of the gear
2 ring further defines a first annular groove, and wherein the outer surface of the post defines a
3 second annular groove that aligns with the first annular groove when the post is received by the
4 gear ring, and further comprising a retaining ring received by the first groove and the second
5 groove to axially retain the post in the gear ring.

1 20. The ratcheting tool as in claim 8, wherein an inner circumference of the gear
2 ring defines at least one key, and further comprising a tool receivable within the gear ring so
3 that the gear ring applies torque from the handle to the tool through the gear ring, wherein the
4 tool has a tool head and a post attached to the tool head, and wherein an outer surface of the
5 post defines at least one keyway that receives the at least one key of the gear ring to thereby
6 hold the post rotationally with respect to the gear ring.

1 21. A ratcheting tool comprising:
2 a handle;

3 a head extending from the handle and having a first compartment, a second
4 compartment that opens to the first compartment, and a third compartment that opens to the
5 second compartment;
6 a gear ring rotatably disposed in the first compartment and defining a plurality of first
7 teeth about an outer circumference thereof;
8 a pawl disposed in the second compartment and having
9 a front side that faces the first teeth of the gear ring and that has a plurality of
10 second teeth, and
11 a back side facing away from the gear ring and defining two grooves separated
12 by a ridge,
13 wherein the pawl is slidable within the second compartment between a first
14 position in which the pawl is wedged between the gear ring and a first side surface of the
15 second compartment and a second position in which the pawl is wedged between the gear ring
16 and a second side surface of the second compartment;
17 a housing disposed in the third compartment in a fixed position with respect to the
18 head;
19 a spring received by the housing and in biasing engagement with the back side of the
20 pawl so that the spring biases the second teeth of the pawl into meshing engagement with the
21 first teeth of the gear ring when the pawl is in either the first position or the second position
22 and so that the pawl is movable against the bias of the spring when the handle is rotated in a
23 ratcheting direction with respect to the gear ring, wherein the spring biasingly engages one of
24 the grooves when the pawl is in the first position and biasingly engages the other of the
25 grooves when the pawl is in the second position; and
26 a lever having
27 a hand actuatable outer portion and
28 an inner portion extending into the head in driving engagement with the pawl,
29 wherein the lever is disposed in the head rotatably with respect to the head and
30 with respect to the housing so that a rotation of the hand actuatable portion with respect to the
31 head and the housing rotates the inner portion to drive the pawl from one of the first position
32 and the second position toward the other of the first position and the second position against
33 the bias of the spring.

1 22. The ratcheting tool as in claim 21, including a pin received by the housing
2 between the spring and the back side of the pawl so that the spring biases the pawl through the
3 pin.